

**ABSTRACT****PERIODIC ELECTROMAGNETIC STRUCTURE**

5 This invention relates to periodic electromagnetic structures (20) for use over a relatively large range of frequencies. In particular, this invention relates to microwave applications, such as antennas and low reflectivity structures. A periodic electromagnetic structure (20) is provided that comprises an array of conducting LC elements (22;22a,22b;42;52;68) in superposition with a frequency-dependent dielectric (30;44;54;70) whose permittivity and/or  
10 permeability varies according to the frequency of radiation incident thereon such that the resonant frequency of the LC elements (22;22a,22b;42;52;68) follows the frequency of the incident radiation.

(Fig. 5)